REMARKS

Amendments to the Claims

Claims 1-3 and 5-17 are pending in the present application. No amendments to the claims have been presently made. No additional claims fee is believed to be due.

Remarks on Examiner's Response to Applicants' Previously Submitted Arguments

A. Rejection of the Claims under 35 USC 102(b) or 103(a)

With respect to the rejection of the claims under 35 USC 102(b), or, alternatively, under 35 USC 103(a), the Examiner disagrees with Applicants' previously presented arguments that Dias is not anticipatory because it fails to disclose each and every limitation of Applicants' claims with sufficient specificity, and, further, because the physical properties of the claimed invention are not inherent in the exemplified compositions of Dias. More specifically, the Examiner asserts that Dias teaches a composition which comprises an oxidizing agent and a chelant of glycinamide-N,N'-disuccinic acid (GADS) in Applicants' claimed amount which inherently would have the same physical properties as claimed. Thus, the Examiner concludes that Applicants' claims are anticipated, or, alternatively, obvious, in view of Dias. Applicants respectfully disagree with this conclusion and request the Examiner's reconsideration based on the following comments.

"[W]hen, as by recitation of ranges or otherwise, a claim covers several compositions, the claim is 'anticipated' if *one* of them is in the prior art," (emphasis in original). MPEP 2131.03 (Rev. 3, August 2005 at 2100-79), *citing Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). However, "[w]hen the prior art discloses a range which touches, overlaps or is within the claimed range, but no specific examples falling within the claimed range are disclosed, a case by case determination must be made as to anticipation. In order to anticipate the claims, the claimed subject matter must be disclosed in the reference with 'sufficient specificity to constitute an anticipation under the statute'". MPEP 2131.03 (Rev. 3, August 2005 at 2100-80). Furthermore, "[i]f the claims are directed to a narrow range, the reference teaches a broad range, and there is evidence of unexpected results within the claimed

narrow range . . . it may be reasonable to conclude that the narrow range is not disclosed with 'sufficient specificity' to constitute an anticipation of the claims." *Id.*

Dias is not anticipatory because it fails to disclose each and every limitation of Applicants' claims with sufficient specificity. As discussed more below, Applicants' claim 1 recites a composition comprising (a) an oxidizing agent, and (b) *chelant having a* $\frac{\log K_{CuL}}{\log K_{CaL}}$ *ratio calculated at pH 10 of at least about 3.20*, and wherein *the chelant is present at a level of at least about 0.1%* by weight of the composition. Dias does not teach the selection of only those chelants claimed by Applicants (*i.e.*, defined as chelants having a $\frac{\log K_{CuL}}{\log K_{CaL}}$ ratio calculated at pH 10 of at least about 3.20) from among the variety of chelants generally disclosed in Dias. Nor does Dias teach specifically that the selected chelants should be present in an amount of at least about 0.1%, as claimed by Applicants.

Dias discloses hair coloring compositions which comprise an oxidizing agent and which also optionally may contain a chelant. While Dias discloses GADS among those suitable chelants, Dias does not teach with sufficient specificity which type of chelants to select and at what level those chelants must be present in the composition in order to constitute an anticipation of Applicants' claims. Dias broadly discloses a variety of chelants which are suitable for use in the compositions of Dias. Additionally, Dias teaches that chelants may be present in the compositions of Dias at a level from about 0.005% to about 20%, and most preferably from about 0.05% to about 2%. Importantly, every composition exemplified in Dias contains the chelant EDTA at a level of 0.1%. Dias does not exemplify any compositions which contain GADS.

Therefore, for these reasons discussed above as well as those discussed in more detail below, Dias is not anticipatory because it fails to disclose each and every limitation of Applicants' claims with sufficient specificity.

B. The Declaration is Commensurate in Scope with Applicants' Claims

The Examiner states that comparative data provided by Applicants in the Declaration of Jennifer Mary Marsh submitted previously with the Amendment dated January 13, 2006 (hereinafter referred to as "the Marsh Declaration II" to avoid confusion with the Marsh Declaration filed with a previous Amendment dated June 14, 2005) is not

commensurate in scope with Applicants' claims, and, thus, is insufficient to support a showing of unexpected results to overcome an obviousness rejection of the claims. More particularly, the Examiner asserts that the comparative data in the declaration compares EDDS with EDTA, however, Applicants' independent claims do not recite specifically the species of chelant used in the comparative data (*i.e.*, EDDS). Therefore, the Examiner concludes that the comparative data is not commensurate in scope with Applicants' claims. Applicants respectfully disagree with this conclusion and request the Examiner's reconsideration based on the following comments.

Although, objective evidence of nonobviousness "must be reasonably commensurate in scope with the claimed invention," MPEP 2144.08 (Rev. 3, August 2005 at 2100-159), *see also, e.g., In re Kulling*, 897 F.2d 1147, 1149, 14 USPQ2d 1056, 1058 (Fed. Cir. 1990), "Office personnel should not require the applicant to show unexpected results over the entire range of properties possessed by a chemical compound or composition" MPEP 2144.08 (Rev. 3, August 2005 at 2100-160), *see also, e.g., In re Chupp*, 816 F.2d 643, 646, 2 USPQ2d 1437, 1439 (Fed. Cir. 1987).

Moreover, "evidence that the compound or composition possesses superior and unexpected properties in one of a spectrum of common properties can be sufficient to rebut a *prima facie* case of obviousness." *Id.* Specifically, "a showing of unexpected results for a single member of a claimed subgenus, or a narrow portion of a claimed range would be sufficient to rebut a prima facie case of obviousness if a skilled artisan 'could ascertain a trend in the exemplified data that would allow him to reasonably extend the probative value thereof.'" MPEP 2144.08 (Rev. 3, August 2005 at 2100-160), *citing In re Clemens*, 622 F.2d 1029, 1036, 206 USPQ 289, 296 (CCPA 1980).

As discussed in more detail below, the comparative data provided by Applicants in the Marsh Declaration II demonstrate that the compositions of the present invention, as currently claimed, possess superior and unexpected properties over compositions comparable to the exemplified compositions of Dias. Particularly, the tests in the Marsh Declaration II compare the hair damage results for compositions containing the chelant EDDS, which are representative of Applicants' claimed compositions, with compositions containing the chelant EDTA, which are representative of compositions exemplified in Dias. Applicants respectfully submit that the showing of unexpected results with respect to EDDS is commensurate in scope with Applicants' claims, as currently presented, and

is sufficient to rebut a rebut a *prima facie* case of obviousness which may be made against Applicants' claims.

The chelant EDDS is a single member of the class of chelants which is claimed by Applicants as part of the claimed hair treatment compositions. As previously amended, and as presently presented, Applicants' claim 1 is directed to a composition which requires, *inter alia*, a chelant having a $\frac{\log K_{CuL}}{\log K_{CaL}}$ ratio calculated at pH 10 of at least about 3.20. Chelants such as EDDS have a $\frac{\log K_{CuL}}{\log K_{CaL}}$ ratio of greater than about 3.20, whereas chelants such as EDTA have a $\frac{\log K_{CuL}}{\log K_{CaL}}$ ratio of less than about 3.20 (specifically, EDTA has a $\frac{\log K_{CuL}}{\log K_{CaL}}$ ratio of 1.60). Thus, Applicants' compositions, as currently claimed, include chelants such as EDDS, but exclude chelants such as EDTA.

Furthermore, Applicants submit that one of ordinary skill in the art could reasonably extend the probative value of the showing of unexpected results for EDDS to other chelants having a $\frac{\log K_{CuL}}{\log K_{CaL}}$ ratio calculated at pH 10 of at least about 3.20. First, it is believed that Applicants' compositions provide improved hair damage results because the selected chelants act to chelate environmental and intrinsic heavy metal ions which would otherwise react with the oxidizing agent to give harmful species, such as free radicals, which damage the hair by oxidizing the disulfide bonds of hair. Second, as discussed in the specification of the present application at pages 12-15, chelants which have a $\frac{\log K_{CuL}}{\log K_{CaL}}$ ratio calculated at pH 10 of at least about 3.20 have a much stronger affinity for binding with transition metals, such as copper, than with alkaline earth metals, such as calcium. Thus, it is reasonable for one of ordinary skill in the art to extend the unexpected results of the comparative data for EDDS to other chelants which similarly bind to certain heavy metal ions.

The Marsh Declaration II demonstrates superior and unexpected results for compositions containing EDDS as compared to compositions containing EDTA. Additionally, Applicants claims recite a limitation which includes chelants such as EDDS

but excludes chelants such as EDTA. Finally, it is reasonable for one of ordinary skill in the art to extend the probative value of the comparative data for EDDS to other chelants which have a $\frac{\log K_{CuL}}{\log K_{CaL}}$ ratio calculated at pH 10 of at least about 3.20. As a result, the showing of unexpected results with respect to EDDS is commensurate in scope with Applicants' claims, as currently presented, and is sufficient to rebut a rebut a *prima facie* case of obviousness which may be made against Applicants' claims.

Rejections Under 35 USC 102(b) and 103(a) Over US Patent No. 6,004,355 to Dias et al.

Claims 1-3, 6-10, 13, and 15 are rejected under 35 USC 102(b) as being anticipated by, or, alternatively, under 35 USC 103(a) as being obvious over, US Patent No. 6,004,355 to Dias et al. ("Dias"). The Examiner asserts that Dias teaches a hair coloring composition comprising an oxidizing agent and a sequestrant (chelant), wherein the composition has a pH of 10, wherein the composition is an aqueous solution, wherein the oxidizing agent comprises from 0.1% to 4% of aqueous hydrogen peroxide, wherein the chelant is present at an amount from 0.01% to 10%, and wherein the composition further comprises an oxidative dye precursor. The Examiner also asserts that Dias teaches a kit comprising an oxidizing agent and one or more coloring agents.

The Examiner then asserts that because Dias teaches the same hair treating ingredients of Applicants' claimed composition, the compositions of Dias would inherently have the same physical properties of log ratio, hydrogen peroxide decomposition ratio, normalized shine ratio, and ability to form a hexadendate complex with Cu^{2+}. Thus, the Examiner concludes that Dias anticipates Applicants' claims. Alternatively, the Examiner asserts that it would be obvious to one of skill in the art that the compositions of Dias would have similar physical properties as those claimed by Applicants, absent unexpected results. Applicants respectfully traverse the present rejection based on the following comments.

Dias is not anticipatory because it fails to disclose each and every limitation of Applicants' claims with sufficient specificity. *See* MPEP 2131.03. Moreover, the physical properties of Applicants' claimed compositions are not inherent in the exemplified compositions of Dias. As previously presented, Applicants' claim 1 recites a

composition comprising (i) an oxidizing agent and (ii) chelant *having a* $\frac{\log K_{CuL}}{\log K_{CaL}}$ *ratio* calculated at pH 10 of *at least about 3.20*, and wherein the chelant is present at a level of *at least about 0.1%* by weight of the composition.

It is believed that Applicants' compositions, which contain the claimed types of chelants in the claimed amount, act to chelate environmental and intrinsic heavy metal ions which would otherwise react with the oxidizing agent to give harmful species, such as free radicals, which damage the hair by oxidizing the disulfide bonds of hair. Consequently, Applicants' compositions provide a good lightening effect to hair during oxidative treatments, such as bleaching and dyeing, yet result in less damage to the hair than that which occurs during the use of known oxidative treatment compositions.

Dias discloses hair coloring compositions which comprise an oxidizing agent and which also optionally may contain a chelant; however, Dias does not teach with sufficient specificity which type of chelants to select and at what level those chelants must be present in the composition in order to constitute an anticipation of Applicants' claims. Dias broadly discloses a variety of chelants which are suitable for use in the compositions of Dias. Additionally, Dias teaches that chelants may be present in the compositions of Dias at a level from about 0.005% to about 20%, and most preferably from about 0.05% to about 2%. Notably, every composition exemplified in Dias, including Example A, contains the chelant EDTA at a level of 0.1%.

In contrast to the disclosure of Dias, Applicants' claimed compositions require a chelant having a $\frac{\log K_{CuL}}{\log K_{CaL}}$ ratio calculated at pH 10 of at least about 3.20. While the calculation of this parameter is within the ability of one of ordinary skill in the art, a description of this parameter is provided at page 12, line 12 to page 15, line 13 of the specification. Additionally, a list of the calculated $\frac{\log K_{CuL}}{\log K_{CaL}}$ ratios for several different chelants is provided at page 15 of the specification. Chelants such as EDDS and EDDHA have a $\frac{\log K_{CuL}}{\log K_{CaL}}$ ratio of greater than about 3.20, whereas chelants such as EDTA have a $\frac{\log K_{CuL}}{\log K_{CaL}}$ ratio of less than about 3.20 (specifically, EDTA has a $\frac{\log K_{CuL}}{\log K_{CaL}}$ ratio of 1.60).

Thus, as Dias exemplifies compositions containing EDTA, Dias does not teach with sufficient specificity which type of chelants to select to anticipate Applicants' claims. Additionally, the $\frac{\log K_{CuL}}{\log K_{CaL}}$ ratio required by Applicants' claims is not an inherent physical property of the exemplified compositions of Dias which contain EDTA.

As a result, each and every element of Applicants' claim 1, as well as claims 2-3, 6-10, 13, and 15, which contain the limitations of claim 1, is not disclosed in Dias with sufficient specificity to constitute anticipation. Moreover, Applicants' have demonstrated that the physical properties of Applicants' claims are not inherent properties of the exemplified compositions of Dias.

Therefore, Applicants' claims 1-3, 6-10, 13, and 15 are novel over Dias.

Applicants' claimed invention also is not obvious in view of Dias. Dias does not teach or suggest all of Applicants' claim limitations and, therefore, does not establish a *prima facie* case of obviousness. *See* MPEP 2143.03. As discussed above, Dias fails to teach or suggest the particular physical properties of the chelants of Applicants' claims. Moreover, Applicants have demonstrated that these physical properties are not inherent in the exemplified compositions of Dias. For the $\frac{\log K_{CuL}}{\log K_{CaL}}$ ratios for several different chelants, including EDDS and EDTA, see page 15 of the specification. Therefore, Dias fails to establish a *prima facie* case of obviousness with respect to Applicants' currently amended claims.

Alternatively, Applicants' claims are not obvious in view of Dias because the Declaration of Jennifer Mary Marsh submitted herewith (hereinafter referred to as "the Marsh Declaration II" to avoid confusion with the Marsh Declaration filed with a previous Amendment dated June 14, 2005), demonstrates that the compositions of the present invention, as currently claimed, possess superior and unexpected properties over compositions comparable to the exemplified compositions of Dias. Specifically, the compositions of the present invention unexpectedly result in significantly less damage to hair that has been treated with the compositions.

As shown in Table I of the Marsh Declaration II, the Normalized Shine Ratio, which is an indication of hair damage, is consistently better for compositions comprising EDDS at various levels than for compositions comprising EDTA at various levels. As the

Normalized Shine Ratio is an index against the Normalized Shine value of virgin hair, a Normalized Shine Ratio value of greater than 1.0 means that the tested hair has a higher Normalized Shine value (*i.e.*, appears less damaged) than virgin hair. Conversely, a Normalized Shine value of less than 1.0 means that the tested hair has a lower Normalized Shine value (i.e., appears more damaged) than virgin hair.

For example, it can be seen that Product 3, which comprises 0.1% EDDS, resulted in a Normalized Shine Ratio of 1.01, whereas Product 9, which comprises 0.1% EDTA, resulted in a Normalized Shine Ratio of 0.85. Thus, the hair treated with Product 3 appears less damaged than virgin hair, and the hair treated with Product 9 appears more damaged than virgin hair. Similarly, Product 6 which comprises 1.0% EDDS, resulted in a Normalized Shine Ratio of 1.03, whereas Product 10, which comprises 1.0% EDTA, resulted in a Normalized Shine Ratio of 0.70. Applicants respectfully submit that these results are clearly superior and unexpected.

To further illustrate the superior and unexpected properties of the compositions of the present invention, Table 2 of the Marsh Declaration II provides the results of visual damage assessment with a scanning electron microscope of the treated hair. Notably, Product 3, which comprises 0.1% EDDS, resulted in a Damage Index of 8.4. In contrast, Product 9, which comprises 0.1% EDTA, resulted in a Damage Index of 63.6. Thus, the hair treated with Product 9 was significantly more damaged than hair treated with Product 3. Similarly, Product 6, which comprises 1.0% EDDS, resulted in a Damage Index of 3.0, whereas Product 10, which comprises 1.0% EDTA, resulted in a Damage Index of 68.6. Applicants respectfully submit that these results also are superior and unexpected.

Accordingly, the Marsh Declaration II demonstrates that the compositions of the present invention, as currently claimed, possess superior and unexpected properties over the compositions comparable to the exemplified compositions of Dias.

Therefore, Applicants' claims 1-3, 6-10, 13, and 15 are novel and nonobvious over Dias.

Rejections Under 35 USC 103(a) Over US Patent No. 6,004,355 to Dias et al. in view of US Patent No. 5,100,436 to Wenke

Claim 5 is rejected under 35 USC 103(a) as being unpatentable over US Patent No. 6,004,355 to Dias et al. ("Dias") in view of US Patent No. 5,100,436 to Wenke

("Wenke"). The Examiner asserts that Dias teaches hair coloring compositions, as described above, wherein the compositions are thickened aqueous compositions. The Examiner acknowledges that Dias does not teach a hair treatment composition in the form of an oil-in-water emulsion. Then, the Examiner asserts that Wenke teaches a composition comprising oxidative dye precursors, oxidizing agents, and chelating agents, wherein the composition may be in the form of an emulsion, suspension, lotion, or gel. Thus, the Examiner concludes that it would have been obvious to one of skill in the art to formulate the composition of Dias in an emulsion because Wenke teaches different forms of hair dyeing compositions, absent unexpected results. Applicants respectfully traverse the present rejection based on the following comments.

The combination of Dias and Wenke does not teach or suggest all of Applicants' claim limitations and, therefore, does not establish a *prima facie* case of obviousness. *See* MPEP 2143.03. Applicants' claim 5 contains the limitations of claim 1. As discussed above, Applicants' claim 1 recites a composition comprising (i) an oxidizing agent and (ii) chelant *having a* $\frac{\log K_{Cal.}}{\log K_{Cal.}}$ *ratio* calculated at pH 10 of *at least about 3.20*, and wherein the chelant is present at a level of *at least about 0.1%* by weight of the composition.

Although Wenke discloses that its compositions may be in the form of an emulsion, neither Dias nor Wenke teach or suggest the selection of chelants having the particular physical properties of the chelants of Applicants' claims.

Therefore, the combination of Dias and Wenke fails to establish a *prima facie* case of obviousness with respect to Applicants' claim 1, as well as Applicants' claim 5. As a result, Applicants' claim 5 is novel and nonobvious over Dias in view of Wenke.

Alternatively, Applicants' claim 5 is not obvious over Dias in view of Wenke because, as discussed above, the Marsh Declaration II demonstrates that the compositions of the present invention possess superior and unexpected properties over the compositions of Dias. Although Wenke discloses that its hair coloring compositions may be in the form of emulsions, suspensions, lotions, or gels, Wenke fails to provide a teaching or suggestion for achieving the superior results of Applicants' claimed compositions.

Therefore, Applicants' claim 5 is novel and nonobvious over the combination of Dias and Wenke.

Rejections Under 35 USC 103(a) Over US Patent No. 6,004,355 to Dias et al.

Claims 11-12, 14, and 16-17 are rejected under 35 USC 103(a) as being unpatentable over US Patent No. 6,004,355 to Dias et al. ("Dias"). The Examiner asserts that Dias teaches methods for coloring hair comprising the steps of applying compositions that comprise an oxidizing agent, oxidation dye precursors, and chelating agents. The Examiner acknowledges that Dias does not teach Applicants' claimed methods with sufficient specificity to constitute anticipation of the claims. However, the Examiner asserts that it would have been obvious to one of skill in the art to use the methods of Dias with a composition that comprises similar ingredients to the compositions of Dias. Applicants respectfully traverse the present rejection based on the following comments.

Applicants' claimed methods are not obvious in view of Dias. Each of Applicants' claims 11-12, 14, and 16-17, as previously presented, directly or indirectly includes the limitations of the $\frac{\log K_{CuL}}{\log K_{CaL}}$ ratio and the claimed chelant level. Accordingly, an argument analogous to that presented above with respect to claim 1 is applicable. Specifically, Dias does not teach or suggest all of Applicants' claim limitations and, therefore, does not establish a *prima facie* case of obviousness. Alternatively, Applicants' claims are not obvious in view of Dias because the Marsh Declaration II demonstrates that the compositions of the present invention, as currently claimed, possess superior and unexpected properties over compositions comparable to the exemplified compositions of Dias.

Therefore, Applicants' claims 11-12, 14, and 16-17 are novel and nonobvious over Dias.

CONCLUSION

In light of the remarks presented herein, it is requested that the Examiner reconsider and withdraw the present rejections. Early and favorable action in the case is respectfully requested.

Applicant has made an earnest effort to place their application in proper form and to distinguish the invention as now claimed from the applied references. In view of the

foregoing, Applicant respectfully requests reconsideration of this application and allowance of Claims 1-3 and 5-17.

Respectfully submitted,
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